

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
23 December 2004 (23.12.2004)

PCT

(10) International Publication Number
WO 2004/110265 A1

(51) International Patent Classification⁷: **A61B 5/00** (74) Agent: HANSSON THYRESSON PATENTBYRÅ AB; Box 73, S-201 20 Malmö (SE).

(21) International Application Number:
PCT/SE2004/000907

(22) International Filing Date: 11 June 2004 (11.06.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0301718-3 13 June 2003 (13.06.2003) SE

(71) Applicant (for all designated States except US): ATOS MEDICAL AB [SE/SE]; Box 183, S-242 22 Hörby (SE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): ÖBERG, Åke [SE/SE]; Ugglevägen 79, S-590 72 Ljungsbro (SE). JOHANSSON, Anders [SE/SE]; Platensgatan 32, S-582 20 Linköping (SE). KNUTSSON, Hans [SE/SE]; Egnahems-gatan 11, S-582 47 Linköping (SE). BORGA, Magnus [SE/SE]; Ringstorp, Jonsberg 1, S-585 94 Linköping (SE). STRÖMBERG, Tomas [SE/SE]; Allmogegatan 62, S-583 33 Linköping (SE). SUNDBERG, Mikael [SE/SE]; Djurgårdsgatan 37B, S-582 29 Linköping (SE).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

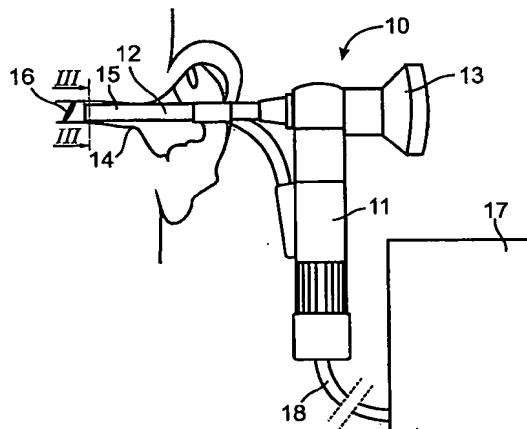
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: DEVICE FOR MEASURING PHYSICAL PROPERTIES OF THE TYMPANIC MEMBRANE



WO 2004/110265 A1

(57) Abstract: Device for measuring physical properties of the tympanic membrane (TM), comprising an elongated probe (12) with a distal end (15) for inspection of the ear, wherein a plurality of optical fibres is arranged in said elongated probe. The plurality of fibres includes either a first set of fibres (21) for conveying light from a light source to said distal end of said probe and a second set of fibres (22) for conveying light reflected from the tympanic membrane in front of said distal end to a first detector means (23) or a set of fibres both for conveying light from a light source to said distal end of said probe and for conveying light reflected from the tympanic membrane in front of said distal end to a first detector means (23). Said first detector means (23) is designed for measuring the intensity of light reflected from the tympanic membrane. Method for measuring physical properties of the tympanic membrane (TM), including the following steps: a) illuminating the tympanic membrane with light from a light source, b) detecting light reflected from the tympanic membrane, and c) analysing the intensity at selected wavelengths or a spectrum of wavelengths.